

CLAIMS

1. An apparatus for swapping a disk-like member, said apparatus comprising:

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at least two tong-like arms for accepting and holding the disk-like member; and

10 a driving-mechanism adapted to drive said at least two tong-like arms, wherein said driving-mechanism is adapted to provide a first movement and a second movement to said at least two tong-like arms, said first movement comprising a vertically oriented movement of said at least two tong-like arms between an up position and a down position, said second movement comprising
15 a horizontally oriented tong-like movement of said at least two tong-like arms.

2. The apparatus according to claim 1, wherein said driving-mechanism comprises a lever apparatus and/or spindle
20 means for controlling said first and second movements.

3. The apparatus according to claim 1, wherein said driving-mechanism, when performing said second movement, moves said at least two tong-like arms between at least one hold
25 position and at least one release position.

4. The apparatus according to claim 3, wherein said driving-mechanism moves said at least one hold position is two different hold positions and said at least one release position
30 is two different hold positions.

5. The apparatus according to claim 1, wherein said driving-mechanism comprises an elevation contrivance and a manipulator drive.

5 6. The apparatus according to claim 1, wherein said at least two tong-like arms comprise extension members.

7. The apparatus according to claim 1, wherein said at least two tong-like arms comprise means for gripping the disk-
10 like member.

8. The apparatus according to claim 7, wherein said gripping means comprises at least one grooved circular ring section adapted to a dimension of the disk-like member.

15 9. The apparatus according to claim 1, further comprising a housing including at least a part of said driving-mechanism.

10 10. The apparatus according to claim 1, wherein said at least two tong-like arms comprise a tong-like structure which enables the arms to be front-loaded or back-loaded.

11. The apparatus according to claim 1, wherein said driving-mechanism comprises at least one driving motor.

25 12. The apparatus according to claim 1, wherein said at least two tong-like arms are affixed to said driving-mechanism.

13. The apparatus according to claim 1, further comprising means for detecting the disk-like member and/or for detecting a position of said at least two tong-like arms.

5 14. The apparatus according to claim 1, further comprising means for controlling movement of said at least two tong-like arms.

10 15. A method for handling or transporting disk-like members, comprising:

 transporting a first disk-like member with a first transporter from a first position to an exchange region;

15 loading said first disk-like member into exchange region;

 transporting a second disk-like member with second transporter to said exchange region;

20 loading said second disk-like member from said second transporter to said first transporter;

 transferring said first disk-like member from said exchange region to said second transporter; and

25 transporting said first disk-like member to a second position with said second transporter.

16. A handling line for handling disk-like members,
comprising:

a disk-like member exchange region;

5 a first transporter having a first set of arms;

a first driving-mechanism adapted to drive said first set
arms, said first driving-mechanism providing said first set of
arms with a first movement and a second movement, said first
10 movement comprising a vertically oriented movement and said
second movement comprising a horizontally oriented tong-like
movement;

a second transporter having a second set of arms;

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a second driving-mechanism adapted to drive said second set
arms, said second driving-mechanism providing said second set of
arms with said first movement and said second movement; and

20 a controller for controlling said first transporter to move
through said first and second movements so that a first disk-
like member is transferred to said exchange region, and said
second transporter to move through said first and second
movements so that a second disk-like member is transferred to
25 said first transporter at said exchange region.

17. The handling line according to claim 16, wherein said
first transporter and/or said second transporter comprises a
device selected from the group consisting of an x-y-stage, a
30 chuck, and a robot.

18. The handling line according to claim 16, wherein said controller controls said second transporter to transfer said first disk-like member from said exchange region to said second transporter.

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19. The handling line according to claim 18, wherein said controller controls said second transporter to move said first disk-like member to a second position.